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Cheng et al.

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(54) **FORMATION OF BURIED COLOR FILTERS IN A BACK SIDE ILLUMINATED IMAGE SENSOR WITH AN ONO-LIKE STRUCTURE**

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See application file for complete search history.

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(57) **ABSTRACT**

A semiconductor image sensor includes a substrate having a first side and a second side that is opposite the first side. An interconnect structure is disposed over the first side of the substrate. A plurality of radiation-sensing regions is located in the substrate. The radiation-sensing regions are configured to sense radiation that enters the substrate from the second side. A plurality of light-blocking structures is disposed over the second side of the substrate. A passivation layer is coated on top surfaces and sidewalls of each of the light-blocking structures. A plurality of spacers is disposed on portions of the passivation layer coated on the sidewalls of the light-blocking structures.

20 Claims, 28 Drawing Sheets

